

REMARKS

Claims 12-27 are pending.

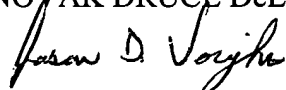
Claims 12-19 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Applicants have amended claim 12 and added claim 26 to make it clear that the "optional" limitation of previous claim 12 is not required in present claim 12, but is required in claim 26.

Claims 12 and 19 stand rejected under 35 U.S.C. 102(b) as being anticipated by Ruppel et al. (US 5,821,390). Applicants respectfully traverse this rejection. Applicants again urge that Ruppel et al. does not teach a ratio t/d_a of tube spacing t to the external diameter d_a of a catalyst tube in the range from 1.3 to 1.6. The Examiner argues that Ruppel et al. teaches values for internal diameter, tube thickness and tube spacing which inherently lead to a ratio in the range 1.1 to 2.1. However, a "genus does not always anticipate a claim to a species within the genus." MPEP 2131.02. Rather, in "order to anticipate the claims, the claimed subject matter must be disclosed in the reference with 'sufficient specificity to constitute an anticipation under the statute.'" MPEP 2131.03. "If the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range...it may be reasonable to conclude that the narrow range is not disclosed with 'sufficient specificity' to constitute an anticipation of the claims." Id. In the present case, as applicants have noted, the ratios of Ruppel et al.'s examples are less than 1.3, and Ruppel et al. contains no suggestion that a higher ratio in the range from 1.1 to 2.1 is desirable, or even that the t/d_a ratio has any importance at all. Furthermore, the Examples of the present specification show that use of a reactor with a t/d_a ratio of greater than 1.3 leads to a superior yield of phthalic anhydride over use of a reactor with a t/d_a ratio less than 1.3. Such results evidence the patentability of the present claims.

Claims 13-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ruppel et al. in view of Westerman et al. (US 4,894,205). Claims 12, 17 and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Groten et al. (US 5,730,843). Applicants respectfully traverse these rejections. The arguments above regarding Ruppel et al. apply equally here. In particular, the unexpected advantages of the present t/d_a ratio evidence the nonobviousness of the present invention. As the Examiner acknowledges, Groten et al. does not teach the ratios as presently claimed. Additionally, applicants urge that Westerman et al. merely teaches that tube diameters are smaller in reactors with more tubes. However, from such a relationship it cannot be determined whether the t/d_a ratio increases or decreases or whether there is a relationship thereof with reactor diameter (Westerman et al. column 1, lines 52-56).

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Respectfully submitted,
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